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EXAMINER

DENNISON, JERRY B

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 06/10/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

124

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/658,705	LEE, HORNG-JUING	
	<b>Examiner</b>	<b>Art Unit</b>	
	J. Bret Dennison	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23, 28-63, 68-73 and 78-83 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23, 28-63, 68-73, and 78-83 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. This Action is in response to Amendment Paper #8 for Application Number 09/658,705 received on 09 April 2004.
2. Claims 1-23, 29-63, 69-73, and 78-83 are presented for examination.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 28, 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Regarding claims 1, 41, and 68, it is unclear to Examiner what applicant means by "located closer." Appropriate correction is required.
4. Regarding claims 28 and 78-83, it is unclear to Examiner what applicant means by "at least some."

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 3, 4, 10, 29, 31, 32, 38, 40, 41, 43, 44, 50, 64-66, 70, and 71 are rejected under 35 U.S.C. 102(a) as being anticipated by Tanaka et al. (U.S. 5,610,841).

5. Regarding claim 1, Tanaka discloses of a video server for transmitting a plurality of media data titles to one or more client(s) from a central server and a proxy server located closed to the one or more client(s) (Tanaka, see Abstract, Tanaka teaches sequence control brokers between the server and the subscribers terminals), wherein each title is divided into blocks to be transmitted to the one or more client(s) in a time sequence, and each block is divided into sub-blocks, comprising:

identifying which sub-blocks from different blocks of each title that are to be cached, wherein the identified sub-blocks include ones that are distributed over the blocks of at least one title (col. 4, lines 5-25, Tanaka teaches a frame block division unit for dividing video from a transmission stand-by buffer into a set of equally sized sub-blocks); and

caching the identified sub-blocks under the control of the proxy server to reduce the transmission bit rate of the central sever for transmitting the titles (col. 13, lines 26-31, Tanaka teaches adjusting the timing of the readout request transmission).

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6. Regarding claim 3, Tanaka discloses the invention substantially as claimed, as described in claim 1, including wherein the caching caches substantially the same number of sub-blocks for each block of said at least one title (col. 4, lines 58-61, Tanaka teaches of video sections being of the same size, col. 4 line 5-10, Tanaka teaches that the sub-blocks are of equal size).

7. Regarding claim 4, Tanaka discloses the invention substantially as claimed, as described in claim 1, including wherein the media titles include video titles, and the sub-blocks include video frames, and each block is divided into video frames that are to be transmitted sequentially (col. 4, lines 5-25), and further comprising inserting the cached video frames into a stream of video frames from the central server to form a combined stream and sending the combined stream to the client(s) (col. 4, lines 5-25, Tanaka teaches that the sub-blocks are transmitted sequentially, enabling real-time video transmission).

8. Regarding claim 10, Tanaka discloses the invention substantially as claimed, as described in claim 1, including wherein prior to any accesses of the titles by the client(s), an average caching approach utilizes storage at the proxy server by storing a substantially equal number of sub-blocks from each title (col. 4, lines 58-61, Tanaka teaches of video sections being of the same size, col. 4 line 5-10, Tanaka teaches that the sub-blocks are of equal size).

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9. Regarding claim 29, Tanaka discloses a system for delivering media information; the system comprising: a plurality of proxy servers, each servicing a number of terminal devices and receiving a request from one of said terminal devices when a user of said one of said terminal devices desires a media title from a plurality of media titles (col. 2, lines 10-40); wherein at least one of said proxy servers comprises a cache memory storing a number of units of at least one of said titles (col. 24, lines 28-29 and 50-54); wherein the units of the at least one title stored are distributed over such title (col. 2, lines 10-40); and a central server coupled to said proxy servers; said central server having a storage space for storing a plurality of said titles and providing data from one of said titles when receiving a proxy request from one of said proxy servers (col. 2, lines 8-40), so that the transmission bit rate of the central media server for transmitting the at least some titles is reduced, each of said proxy servers located closer to the terminal devices it is servicing than the central server (see Abstract)..

10. Regarding claim 31, Tanaka teaches all of the features of claim 29, including wherein the at least one title is divided into blocks to be transmitted to the one or more user(s) in a time sequence, and each block is divided into sub-blocks (col. 4, lines 5-25), wherein the at least one proxy server caches the same number of sub-blocks from each block of said at least one title (col. 24, lines 28-29 and 50-54).

11. Regarding claim 32, Tanaka teaches all of the features of claim 29, including wherein the at least one title includes a video divided into blocks to be transmitted in a

time sequence, and each block is divided into sub-blocks, and the sub-blocks comprise partial information of video frames, wherein the video frames are to be transmitted sequentially (col. 4, lines 5-25).

12. The limitations of claim 38 are covered in the rejection of claim 29. Therefore claim 38 is rejected by the same reference used in claim 29.

13. Claim 40 recites the same limitations as claim 3. Therefore claim 40 is rejected by the same references as claim 3.

14. Claim 41 recites the same limitations as claim 1. Therefore claim 41 is rejected by the same references as claim 1.

15. The limitations of claims 43 and 44 are covered by the rejections of claims 3 and 4. Therefore claims 43 and 44 are rejected by the same references used for the rejections of claims 3 and 4.

16. The limitations of Claim 50 are covered by the limitations of claim 10. Therefore claim 50 is rejected by the references of claim 10.

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17. The limitations of claims 64-66 are covered by the rejections of claims 24-26.

Therefore claims 64-66 rejected by the same references used for the rejections of claims 24-26.

18. The limitations of claim 68 are covered by the rejections of claim 1. Therefore claim 68 is rejected by the same references used for the rejections of claims 1.

19. Claim 70 recites the same limitations as claim 3. Therefore claim 70 is rejected by the same references as claim 3.

20. The limitations of claim 71 are covered in the rejection of claim 4. Therefore claim 71 is rejected by the same reference used in claim 4.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



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2. Claim 2, 9, 11, 12, 17-19, 30, 37, 39, 42, 49, 51, 52, 57-59, 69, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka and Ong (U.S. 5,815,662).

3. As to claim 2, Tanaka discloses the invention substantially as claimed, as described in claim 1, but Tanaka does not disclose wherein the cached sub-blocks are cached for time periods that are independent of time.

In an analogous art, Ong discloses of cached data blocks being checked around a predetermined time interval where the data block remains in memory. Ong also teaches that the cached data blocks are removed (oldest first) if the allocated sections of the memory buffer are full (col.2, lines 30-67).

One in the ordinary skill at the time the invention was made would have considered combining Tanaka's video server with the system of Ong to keep current blocks of data in the cache until priority takes over, removing the oldest-in-time data block from the allocated memory, benefiting the performance of the caching system by minimizing unnecessary repetitive accesses to data storage devices and managing peak-use data loadings by efficient data scheduling by server, reducing the bandwidth of the server.

4. Regarding claim 9, Tanaka teaches all of the features of claim 1. However, he fails to teach wherein the identifying is made as a function of an access profile of the titles at the proxy.

In an analogous art, Ong teaches data blocks from data storage being retained in server memory buffer based on clients requests, or access profiles (col. 3, lines 1-15).

Therefore, it would have been obvious to one in the ordinary skill in the art at the time the invention was made to combine the video server of Tanaka with the predictive memory caching system of Ong for the benefits of minimizing unnecessary repetitive accesses to data storage devices and managing peak-use data loadings by efficient data scheduling by the network server (col. 2, lines 23-27).

5. Regarding claim 11, Tanaka teaches all of the features of claim 1. However, he fails to teach wherein prior to any accesses of the titles by the client(s), a proportional caching approach utilizes access history data to determine how much of each title to cache. In an analogous art, Ong teaches that parallel streaming data processes can use request history to determine what to cache (col. 3, lines 15-25).

6. Regarding claim 12, Tanaka teaches all of the features of claim 1. However, he fails to teach wherein after the system starts operation, cache content at the proxy server will change from time to time to reflect actual access behavior. In an analogous art, Ong teaches of cache content being removed to free up space (col. 2, lines 60-67).

7. Regarding claim 17, Tanaka teaches all of the features of claim 1. However, he fails to teach further comprising replacing a cached portion of a particular title by deleting the most recently cached portion of such title. In an analogous art, Ong

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teaches releasing the memory buffer based on priority level. It would have been obvious to one skilled in the art that the most recently cached portion of a particular title could have the lowest priority given that all groups requesting that portion have received it.

8. Regarding claim 18, Tanaka teaches all of the features of claim 1. However, he fails to teach further comprising deciding which titles shall be subject to caching replacement using a most current access profile as an indication of a future profile. In an analogous art, Ong teaches data blocks from data storage being retained in server memory buffer based on clients requests, or access profiles (col. 3, lines 1-15).

9. Regarding claim 19 Tanaka teaches all of the features of claim 1. However, he fails to teach further comprising keeping track of each access request at the proxy server in order to determine which titles shall be subject to caching replacement. In an analogous art, Ong teaches that parallel streaming data processes can use request history for timing of release (col. 3, lines 15-25).

10. Claim 30 is covered by the limitations of claim 2. Therefore claim 30 is rejected by the references used in the rejection of claim 2.

11. Regarding claim 37, Tanaka teaches all of the features of claim 29. However he fails to teach where the number of units is a function of an access profile of the at least

one title at the at least one proxy server. In an analogous art, Ong teaches data blocks from data storage being retained in server memory buffer based on clients requests, or access profiles (col. 3, lines 1-15).

12. Claim 39 is covered by the limitations of claim 2. Therefore claim 39 is rejected by the references used in the rejection of claim 2.

13. The limitations of claim 42 are covered by the rejections of claims 2. Therefore claim 42 is rejected by the references used for the rejections of claim 2.

14. The limitations of Claim 49 are covered by the limitations of claim 9. Therefore claim 49 is rejected by the references of claim 9.

15. The limitations of claims 51 and 52 are covered by the rejections of claims 11 and 12. Therefore claims 51 and 52 are rejected by the same references used for the rejections of claims 11 and 12.

16. The limitations of claims 57-59 are covered by the rejections of claims 17-19. Therefore claims 57-59 are rejected by the same references used for the rejections of claims 17-19.

17. The limitations of Claim 69 are covered by the limitations of claim 2. Therefore claim 69 is rejected by the references of claim 2.

18. The limitations of claim 73 are covered in the rejection of claim 9. Therefore claim 73 is rejected by the same reference used in claim 9.

21. Regarding claims 78, and 80-82, Tanaka discloses the limitations, substantially as claimed, as described in claim 1, 29, 38, and 41, including wherein a peak transmission rate of the central media server for transmitting the at least some titles is reduced (Tanaka, col. 13, lines 22-35).

Claims 5, 6, 7, 33, 34, 35, 45, 46, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka and MacInnis et al. (U.S. 6,570,579).

22. Regarding claim 5, Tanaka teaches all of the features of claim 1, including wherein the media titles include video titles, and the sub-blocks comprise partial information of video frames (col. 4, lines 5-10), wherein the video frames are to be transmitted sequentially (col. 4, lines 15-22).

However, Tanaka does not teach further comprising combining the partial information of video frames from the proxy server with complementary partial information of such video frames from the central server into complete video frames and sending the complete video frames to the client(s).

In an analogous art, MacInnis discloses a graphics display system where video input 14 is provided by one source and graphics memory 28 is provided by another source (see Figure 1). An encoder combines the two inputs into a suitable display format (col. 7, lines 5-15).

Therefore, it would have been obvious to one in the ordinary skill in the art at the time the invention was made to combine Tanaka's video server with MacInnis' graphics display system to generate a video feed, containing video and graphics, for the benefit of sending video and graphics data in real time when a plurality of requests are received at a time.

23. Regarding claim 6, Tanaka teaches all of the features of claim 1. However, Tanaka does not teach wherein the partial information comprise video information along some scan lines of video frames, further comprising combining the video information along such scan lines with complementary video information along other scan lines of such video frames from the central server into complete video frames and sending the complete video frames to the client(s).

In a related art, MacInnis discloses a video pipeline which supports up to one scaled video window per scan line (col.9, lines 55-65) combined with graphics windows on each scan line (col. 6 lines 50-60). An encoder combines the two inputs into a suitable display format (col. 7, lines 5-15).

24. Regarding claim 7, Tanaka discloses all of the features of claim 5, except wherein the partial information comprise video information obtained at a set of sampling times and at a first sampling rate lower than that of a video source from which said information originates, further comprising combining the video information at the lower first sampling rate from the proxy server with complementary video information taken at sampling times different from the set of sampling times of such video frames from the central server into video data at a sampling rate higher than the First sampling rate and sending the video data at the higher sampling rate to the client(s).

In an analogous art, MacInnis discloses a graphics display system where video input 14 is provided by one source and graphics memory 28 is provided by another source (see Figure 1). The system includes a video decoder having a sample rate converter that converts the samples to the frequency of the video signal (col. 2, lines 45-60). An encoder combines the two inputs into a suitable display format (col. 7, lines 5-15).

25. Regarding claims 33 and 34, Tanaka teaches all of the features of claim 32. However, he does not teach wherein the at least one proxy server combines the partial information of video frames with complementary partial information of such video frames from the central server into complete video frames and sends the complete video frames to user(s). He also does not teach wherein the partial information comprise video information along some scan lines of video frames, and wherein the at least

one proxy server combines the video information along such scan lines with complementary video information along other scan lines of such video frames from the central server into complete video frames and sends the complete video frames to the user(s).

In an analogous art, MacInnis discloses a graphics display system where video input 14 is provided by one source and graphics memory 28 is provided by another source (see Figure 1). An encoder combines the two inputs into a suitable display format (col. 7, lines 5-15).

Therefore, it would have been obvious to one in the ordinary skill in the art at the time the invention was made to combine Tanaka's video server with MacInnis' graphics display system to generate a video feed, containing video and graphics, for the benefit of sending video and graphics data in real time when a plurality of requests are received at a time.

26. The limitations of claims 37 and 47 are covered in the rejection of claim 7. Therefore claims 37 and 47 are rejected by the same references used in claim 7.

27. The limitations of claims 45 and 46 are covered by the rejections of claims 5 and 6. Therefore claims 45 and 46 are rejected by the same references used for the rejections of claims 5 and 6.



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Claims 8, 36, 48, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka, MacInnis, and Valmiki et al. (U.S. 6,636,222).

28. Regarding claim 8, Tanaka and MacInnis teach all of the features of claim 5, except wherein the partial information comprise video information in a basic layer and the complementary partial information comprises video information in an enhancement layer, said basic and enhancement layers being defined according to spatial, signal-to-noise or temporal scalability.

Valmiki discloses of a Video and Graphics system that processes data using windows that may overlap or cover one another with arbitrary spatial relationships (col. 6, lines 20-31).

Therefore, it would have been obvious to one in the ordinary skill in the art at the time the invention was made to incorporate the graphics system of Valmiki into Tanaka for the benefit of overcoming the difficulty of decoding video data that has been compressed within an allotted number of clock cycles (col. 1, lines 40-60).

29. The limitations of claims 36, 48, and 72 are covered in the rejection of claim 8. Therefore claims 36, 48, and 72 are rejected by the same references used in claim 8.

30. Claim 13-16 and 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka and Greenwood et al. (U.S. 5,568,181).

31. Regarding claim 13, Tanaka teaches all of the features of claim 1. However, he fails to teach further comprising beginning a caching process at the proxy server after receiving a title request from a client by ensuring there is sufficient bandwidth from said proxy to such client to deliver the request and if not, denying the request.

In an analogous art, Greenwood teaches returning a rejection of the request if sufficient bandwidth is not available (col. 5, lines 17-28).

Therefore, it would have been obvious to one in the ordinary skill in the art at the time the invention was made to combine the video server of Tanaka with the distribution system of Greenwood to make video distribution to users both economically and technically practical. The benefit of combining the distribution system of Greenwood with the video system of Tanaka is to lesson the difficulty in scheduling viewing and managing the local distribution of video data.

32. Regarding claim 14, Tanaka and Greenwood teach all of the features of claim 13, including further comprising delivering the complete content of the requested title when such content is in local storage of said proxy server. (Greenwood, col. 1, lines 34-60, Greenwood teaches distribution of video files stored at remote video libraries).

33. Regarding claim 15, Tanaka and Greenwood teach all of the features of claim 13, including further comprising when said proxy server does not have complete content of the requested title, determining if there is sufficient available backbone bandwidth to carry said title from the central server to said proxy server and if not, rejecting the

request. (see Figure 1 and col. 3., lines 5-30, and col. 5, lines 15-30, Greenwood teaches of video libraries providing video files through the local server to the cache if there is sufficient bandwidth).

34. Regarding claim 16, Tanaka and Greenwood teach all of the features of claim 13, including further comprising activating a progressive caching process to adjust cache content at said proxy server to reflect the requested title (Greenwood, col. 4, lines 17-35, Greenwood teaches that the cache content is adjusted if the requested file is not in the cache).

35. The limitations of claims 53-56 are covered by the rejections of claims 13-16. Therefore claims 53-56 rejected by the same references used for the rejections of claims 13-16.

Claims 20-22, 28 and 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka and Cherkasova et al. (U.S. 6,425,057).

36. Regarding claim 20, Tanaka teaches all of the features of claim 1. However, he does not disclose further comprising deciding which titles shall be subject to caching replacement using a current access profile as an indication of the future profile, wherein said deciding include:

defining a time window ending at the time of the caching replacement;

calculating an access frequency of each title in a storage of the proxy server, said access frequency being a function of the accesses to such title during the time window or a portion thereof; and

performing the caching replacement in response to the access frequencies of the titles in the storage.

In an analogous art, Cherkasova discloses of a method and system for caching objects and replacing cached objects based on frequency of requests and time (col. 4, lines 45-53).

Therefore it would have been obvious to one in the ordinary skill in the art at the time the invention was made to combine the video server of Tanaka with the caching method of Cherkasova to have a method for systematically caching objects and replacing cached objects such that popular media titles are stored in cache and previous media titles are readily replaced. This would benefit users by providing a better cache management of the system for providing popular, on-demand media titles.

37. Regarding claim 21, Tanaka and Cherkasova teach all of the features of claim 20, including, wherein said access frequency is proportional to the sum of the accesses to such title during the time window or a portion thereof (Cherkasova, col. 4, lines 45-54, Cherkasova teaches the use of frequency of requests for the object).

38. Regarding claim 22, Tanaka and Cherkasova teach all of the features of claim 20, including wherein said access frequency is proportional to a time-weighted sum of the

accesses to such title during the time window or a portion thereof, with the time weighting in favor of accesses occurring more recently in the window (Cherkasova, col. 8, lines 5-25, Cherkasova teaches in a time-dependent implementation, the assignment of a weighting factor may be made dependent on request times).

39. Regarding claim 28, Tanaka discloses a system for delivering media information; the system comprising a plurality of proxy servers, each servicing a number of terminal devices and receiving a request from one of said terminal devices when a user of said one of said terminal devices desires for a media title among a plurality of media titles (col. 2, lines 10-40); each of said proxy servers comprising a cache memory for storing units of at least some of the media titles (col. 24, lines 28-30 and lines 50-55); a central media server coupled to said proxy servers (col. 2, lines 10-25, Tanaka discloses a central video server comprising a plurality of frame block servers); and said central media server having a storage space for storing a plurality of said titles and providing data from one of said titles when receiving a proxy request from one of said proxy servers (col. 2, lines 8-16), so that the transmission bit rate of the central media server for transmitting the at least some titles is reduced, each of said proxy servers located closer to the terminal devices it is servicing than the central server (see Abstract).

However, Tanaka does not disclose wherein the number of units of each of said at least some titles is determined by a request frequency to said each of said titles;

In an analogous art, Cherkasova discloses a method and system for caching objects in an object transfer environment based on frequency of requests for the object (col. 4, lines 45-55).

Therefore it would have been obvious to one in the ordinary skill in the art at the time the invention was made to combine the video server of Tanaka with the caching method of Cherkasova to have a method for systematically caching objects and replacing cached objects such that popular media titles are stored in cache and previous media titles are readily replaced. This would benefit users by providing a better cache management of the system for providing popular, on-demand media titles.

40. The limitations of claims 60-62 are covered by the rejections of claims 20-22. Therefore claims 60-62 are rejected by the same references used for the rejections of claims 20-22.

41. Regarding claim 79, Tanaka and Cherkasova teach the limitations, substantially as claimed, as described in claim 28, including wherein a peak transmission rate of the central media server for transmitting the at least some titles is reduced (Tanaka, col. 13, lines 22-35).

Claims 23, 63, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka and Dias et al (U.S. 6,317,778).

42. Regarding claim 23, Tanaka teaches all of the features of claim 1. However, Tanaka does not disclose further comprising detecting multiple ongoing requests from clients for a title received at different times during caching in response to an initial request of said title, and increasing the number of sub-blocks cached from the blocks of at least one title in response to a subsequent request of said title.

In an analogous art, Dias teaches duplication of objects stored in the cache to provide relatively high availability for more popular media titles (col. 4, lines 29-46).

Therefore it would have been obvious to one in the ordinary skill in the art at the time the invention was made to combine the video server of Tanaka with the cache duplication system of Dias to provide more than one copy of popular video titles in the cache. This benefits the video server system by enabling a better system throughput and reducing the number of cache misses and/or preventing poor system performance in case of cache node failure (col. 4, lines 32-40).

43. The limitations of claim 63 are covered in the rejection of claim 23. Therefore claim 63 is rejected by the same references used in claim 23.

44. Regarding claim 83, Tanaka and Dias teach the limitations, substantially as claimed, as described in claim 68, including wherein a peak transmission rate of the central media server for transmitting the at least some titles is reduced (Tanaka, col. 13, lines 22-35).

***Response to Amendment***

45. Applicant's arguments with respect to claims 1, 3, 4, 10, 24-26, 29, 31, 32, 38, 40, 41, 43, 44, 50, 64-66, 70, 71 and 74-76 filed 09 April 2004 have been fully considered but they are not persuasive. Applicant's arguments include the failure of previously applied art to expressly disclose the teachings of the transmission rate of the central server for transmitting one or more titles is reduced [see Applicant's Response, Paper#8 page 16 of 22]. It is evident from the mappings found in the above rejection that Tanaka discloses the teaching of adjusting the transmission rate depending on an overflow or underflow within a predetermined interval. Further, it is clear from the numerous teachings (previously and currently cited) that the provision for using "a proxy server" was widely implemented in the networking art.

46. As it is extremely well known in the networking art as already shown by Tanaka as well as other prior arts of records disclosed, servers use proxy servers to handle multiple requests for data, which reduces the transmission rate of the central server. Applicant only claims a proxy server located between the central server and one or more clients. By Tanaka disclosing a video server and sequence control brokers installed between the video server and subscriber terminals, it is obvious to the examiner that the sequence control brokers act as proxy servers by receiving video requests from clients and reading out the video segments transmitted to the sequence control brokers from the video server.

47. Applicant's arguments also include the failure of previously applied art to expressly disclose the teachings wherein cached sub-blocks are cached for time



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periods that are independent of time [see Applicant's Response, Paper#8 page 18 of 22]. It is evident from the mappings found in the above rejections that Ong, by stating that "checking if the allocated sections of the memory buffer are full and, if so, removing the oldest-in-time, lowest priority data block to free a section of the memory buffer," discloses that when the memory buffer is full, which can happen at unpredictable times, cached sub-blocks are removed. Applicant states that Ong implies that the data blocks are removed at random times [see Applicant's Response, Paper#8 page 18 of 22]. Therefore, the cached sub-blocks are removed at random times, which means they are removed at times that are independent of time.

48. Thus, Applicant's arguments drawn toward distinction of the claimed invention and the prior art teachings on this point are not considered persuasive. It is also clear to the Examiner that Tanaka clearly teaches the independent claims of the Applicant's claimed invention.

49. Applicant's arguments with respect to claims 1, 3, 4, 10, 24-26, 29, 31, 32, 38, 40, 41, 43, 44, 50, 64-66, 70, 71 and 74-76 are deemed moot in view of the following new grounds of rejection, necessitated by Applicant's amendment to the claims (i.e., *...located closer to the one or more client(s) than the central server*) which significantly affected the scope thereof.

50. Furthermore, as it is Applicant's right to continue to claim as broadly as possible their invention, it is also the Examiner's right to continue to interpret the claim language as broadly as possible. It is the Examiner's position that the detailed functionality that allows for Applicant's invention to overcome the prior art used in the rejection, fails to

differentiate in detail how these features are unique. As it is extremely well known in the networking art as already shown by Tanaka as well as other prior arts of records disclosed, using "a proxy server to enhance the capability of the central server for handling multiple requests" is taught as well as other claimed features of Applicant's invention. By the rejection above, the applicant must submit amendments to the claims in order to distinguish over the prior art use in the rejection that discloses different features of Applicant's claimed invention.

51. It is the Examiner's position that Applicant has not yet submitted claims drawn to limitations, which define the operation and apparatus of Applicant's disclosed invention in manner, which distinguishes over the prior art.

52. Failure for Applicant to significantly narrow definition/scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims with scope parallel to the Applicant in the response and reiterates the need for the Applicant to more clearly and distinctly define the claimed invention.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Bret Dennison whose telephone number is (703)305-8756. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on (703)308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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